Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-44 (canceled).

45. (New) A method for binding nucleic acids to a solid phase comprising contacting a solution containing nucleic acids with a solid phase which has hydrophobic and hydrophilic groups on its surface, wherein a salt and polyethylene glycol are present in said solution during binding of the nucleic acids to said solid phase and said nucleic acids are reversibly and sequence-unspecifically bound to the surface.

46. (New) The method as claimed in claim 45, wherein said surface has alkyl or aryl groups as hydrophobic groups.

47. (New) The method as claimed in claim 46, wherein the alkyl groups are selected from C_8 alkyl, C_{18} alkyl and mixtures thereof.

48. (New) The method as claimed in claim 45, wherein the surface has hydroxyl groups as hydrophilic groups.

49. (New) The method as claimed in claim 45, wherein the solid phase is solid particles.

50. (New) The method as claimed in claim 45, wherein the solid phase is magnetic.

51. (New) The method as claimed in claim 45, wherein the salt is an alkali, alkaline earth or/and ammonium halide.

52. (New) The method as claimed in claim 45, wherein said polyethylene glycol has an average molar mass of 1000 to 20000 g/mol.

53. (New) The method as claimed in claim 45, wherein the salt is at a concentration of 5 mmol/l to 4 mol/l.

54. (New) The method as claimed in claim 45, wherein said polyethylene glycol is at a concentration of 5% by weight to 40% by weight.

55. (New) The method as claimed in claim 45, wherein the nucleic acids are DNA.

56. (New) The method as claimed in claim 45, wherein the nucleic acids are amplification products.

57. (New) The method as claimed in claim 45, wherein single-stranded or double-stranded nucleic acids are selectively bound.

58. (New) The method as claimed in claim 45, wherein the nucleic acid is selectively bound with regard to size in a range of $\geq$ 5 nucleotides to $\leq$ 1000 nucleotides.

59. (New) A method for isolating or/and purifying nucleic acids comprising

(a) providing a solution containing nucleic acids,

(b) contacting the solution containing nucleic acids with a solid phase which has hydrophobic and hydrophilic groups on its surface, wherein a salt and polyethylene glycol are present in said solution during binding of the nucleic acids to said solid phase and the nucleic acid is reversibly and sequence-unspecifically bound to the surface of the solid phase, and

(c) separating the solid phase from the solution.

60. (New) The method according to claim 59, wherein said nucleic acid is detached from the solid phase.

61. (New) The method as claimed in claim 59, wherein the solid phase is magnetic and the solid phase is separated from the solution by magnetic means.

62. (New) The method as claimed in claim 59, wherein the solid phase separated in step (c) is washed with a buffer solution which detaches impurities bound to the solid phase but not the nucleic acids bound to the solid phase.

63. (New) The method as claimed in claim 59, wherein the nucleic acid is detached in step (d) by means of an elution solution.

64. (New) The method as claimed in claim 59, wherein the nucleic acid detached from the solid phase and the solid phase are separated by magnetic means.

65. (New) The method as claimed in claim 59, further comprising subjecting the nucleic acid obtained to a mass spectrometric analysis.

66. (New) A method for determining a nucleotide sequence comprising

(a) binding a nucleic acid strand to a solid phase according to the method of claim 45, and

(b) sequencing the nucleic acid strand by known methods.

67. (New) The method as claimed in claim 66, further comprising (c) purifying the sequencing products.

68. (New) A method for synthesizing nucleic acids comprising the steps

(a) binding a nucleic acid to a solid phase according to the method of claim 45, and

(b) extending the nucleic acid by at least one nucleotide by known methods.

69. (New) A method for detecting an analyte in a sample, comprising

contacting a solution containing nucleic acids with a solid phase, wherein said solid phase has hydrophobic and hydrophilic groups on the surface, and wherein a salt and polyethylene glycol are present in said solution during binding of the nucleic acids to said solid phase and the nucleic acids are reversibly and sequence-unspecifically bound to the surface of said solid phase,

subsequently contacting the solid phase with a sample, and

detecting any analyte by means of the binding to the bound nucleic acids.

70. (New) A reagent kit for carrying out a method as claimed in claim 45 comprising:

(a) a binding buffer which contains a salt and a polyethylene glycol, and

(b) a solid phase which has a hydrophobic and hydrophilic groups on its surface.

71. (New) The reagent kit as claimed in claim 70, further comprising,

(c) an elution buffer that can be used to detach the nucleic acid bound to this surface, and

(d) a washing buffer which can be used to separate impurities bound to the solid phase.

72. (New) A method for binding nucleic acids to a solid phase, comprising contacting a solution containing nucleic acids with a solid phase in the presence of a dehydrating reagent, wherein said solid phase comprises a hydrophilic water-containing polymer matrix, and wherein the nucleic acids are reversibly and sequence-unspecifically bound to the solid phase.

73. (New) The method as claimed in claim 72, wherein the polymer matrix contains a hydrophilic water-soluble polymer.

74. (New) The method as claimed in claim 72, wherein the polymer matrix contains a hydrophilic organic polymer.

75. (New) The method as claimed in claim 72, wherein the hydrophilic polymer matrix comprises a polysaccharide.

76. (New) The method as claimed in claim 75, wherein it is a polysaccharide with terminal hydroxyl groups.

77. (New) The method as claimed in claim 75, wherein the polysaccharide is dextran.

78. (New) The method as claimed in claim 72, wherein the dehydrating reagent is selected from the group consisting of salts, polyethylene glycol and mixtures thereof.

79. (New) The method as claimed in claim 78, characterized in that a chaotropic salt buffer is added as the dehydrating reagent.

80. (New) The method as claimed in claim 72, wherein the hydrophilic water-containing polymer matrix forms an envelope polymer around a magnetic core.

81. (New) The method as claimed in claim 80, wherein the magnetic core is magnetite.

82. (New) A method for isolating or/and purifying nucleic acids comprising the steps

(a) providing a solution containing nucleic acids,

(b) contacting the solution containing nucleic acids with a solid phase which comprises a hydrophilic water-containing polymer matrix in the presence of a dehydrating reagent whereby the nucleic acid is

reversibly and sequence-unspecifically bound to the solid phase, and

(c) separating the solid phase from the solution.

83. (New) The method according to claim 82, wherein said nucleic acids are detached from said solid phase.

84. (New) A method for determining the nucleotide sequence of a nucleic acid comprising the steps:

(a) binding a nucleic acid to a solid phase according to the method of claim 72, and

(b) sequencing the nucleic acid by known methods.

85. (New) The method as claimed in claim 84, further comprising (c) purifying the sequencing products.

86. (New) A method for synthesizing nucleic acids comprising the steps:

(a) binding a nucleic acid to a solid phase according to the method of claim 72, and

(b) extending the nucleic acid by at least one nucleotide by known methods.

87. (New) A method for detecting an analyte in a sample, comprising

contacting a solution containing nucleic acids with a solid phase in the presence of a dehydrating reagent, wherein said solid phase comprises a hydrophilic water-containing polymer matrix, and wherein the nucleic acids are reversibly and sequence-unspecifically bound to the solid phase,

subsequently contacting the solid phase with the sample, and

detecting an analyte by means of the binding to the bound nucleic acids.

88. (New) A reagent kit for carrying out a method as claimed in claim 72 comprising:

(a) a binding buffer which contains a dehydrating reagent, and

(b) a solid phase which comprises a hydrophilic water-containing polymer matrix.

89. (New) The reagent kit as claimed in claim 88, further comprising

(c) an elution buffer which can be used to detach nucleic acids bound to the surface, and

(d) a washing buffer which can be used to separate impurities bound to the solid phase.